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10/828,420

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Scott Dewey

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EXAMINER

KARLSEN, ERNEST F

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/828,420  
Filing Date: April 20, 2004  
Appellant(s): DEWEY ET AL.

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Miller IP Group, PLC  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed June 4, 2008 appealing from the Office action mailed March 4, 2008.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

3,621,334	Burns et al	11-1971
7,079,406	Kurokami et al	07-2006

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burns et al in view of Kurokami et al.

Burns et al show a ground fault sensing apparatus wherein differential current in a two wire supply is sensed with a magnetic core 30 having a Hall sensor 32 located in a gap of the core 30. The abstract and other locations of Burns et al indicate that AC or DC signals may be sensed. Burns et al do not indicate that their device can be used with a fuel cell. Kurokami et al teach that a ground fault detector may be used with any of plural power source types including an inverter, a battery, a solar power generation apparatus or a fuel cell. See column 2 lines 24-30 of Kurokami et al. It would have been obvious to one of ordinary skill in the art at the time of the invention to have used the apparatus of Burns et al to sense ground fault conditions in a fuel cell powered system because such is suggested by Kurokami et al. It is further considered obvious by the Examiner, with or without the teaching of Kurokami et al, to have used the apparatus of Burns et al to sense ground faults in a system regardless of the kind of power source used. The function of Burns et al is the same when using a fuel cell as a power source as it would be using a lead acid battery as a power source. Amplifiers as

claimed in claims 2 and 12 can be used anywhere it is desired to change the level of a signal. Figure 5 of Burns et al shows a toroid core 78.

#### **(10) Response to Argument**

Appellants have characterized their invention accurately in their Brief, page 3, lines 4-15. "High voltage component" is considered a term without specific meaning.

Appellants discussion of Burns et al is accurate but because the use of words by Burns et al is different from those used by Appellant, comparison using the words of each makes the devices appear different when they are actually the same. Burns et al disclose a ground fault sensing circuit. Appellants never use the words "ground fault" to describe their apparatus but "ground" appears a reasonable amount in Appellants' specification and to one of ordinary skill in the art Appellants' device is a ground fault detector. Appellants call their device a "high voltage isolation detection system" which, to the Examiner, is a ground fault detector. Burns et al call winding 26 a primary winding and winding 28 a secondary primary winding. Such is not good language since primary and secondary allude to transformer operation not to a differential current detector. Column 2, lines 42-60 of Burns et al clearly indicate that elements 26, 28 and 30 operate as a differential current detector. Appellants appear to agree with the above by the statements at the end of page 3 and the top of page 4 of their Brief. The Examiner agrees that Burns et al does not disclose a fuel cell power source. In addition Burns et al does not use the words "high voltage load".

Appellants' discussion of Kurokami et al on page 4 of their Brief is accurate but omissive. Appellants do not mention in their discussion of Kurokami et al that "fuel cell"

is disclosed at column 2, lines 29 and 30 and at column 4, lines 4 through 7 of Kurokami et al. Appellants admit that element 12 of Kurokami et al is a differential current detector. Then Appellants state that Kurokami et al does not mention magnetic field cancellation. The details of the current detector 12 of Kurokami et al are not presented in detail but are shown to be inductive in Figure 1 and discussed in column 4 lines 47 plus. One of ordinary skill would recognize that current carrying lines produce magnetic fields that are in opposite directions for currents flowing in opposite directions. Element 12 of Kurokami et al clearly uses magnetic field cancellation in the same manner as Burns et al. Kurokami et al does not show a magnetic field concentrator but Burns et al does show a magnetic field concentrator.

It is noted that Appellants and Kurokami et al use single turn and Burns et al use multiturn differential current detectors. Multiturn and single turn detectors are considered equivalent.

In their Discussion section, pages 4 and 5 of their Brief, Appellants submit that the prior art does not teach providing two wires extending through a magnetic field concentrator where the wires are electrically coupled to a fuel cell stack and a high voltage component. The Examiner disagrees. Burns et al show a system connecting a battery (connected to terminals 10 and 12) to a load 70 that includes detecting fault currents using magnetic field cancellation with the aid of a magnetic field concentrator 30, but does not disclose a fuel cell or a "high voltage load". Any load is a "high voltage load". Two volts is a high voltage compared to one volt. Kurokami et al teaches a system having a fuel cell, a current leak detection device that uses magnetic field

Art Unit: 2829

cancellation and a load. Appellants' statement on page 5, line 6 of their Brief is in error.

Kurokami et al does teach detecting leakage currents by magnetic field cancellation.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Ernest F. Karlsen/

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/Ha T. Nguyen/

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8-12-8

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